

accessing one or more resources available for use by the system to provide a service,

said negotiating including use of a data store containing data relating to a measure of the current capacity to provide a service, and being arranged to negotiate based at least in part on said data to provide a service in response to a request; and

updating said data on the basis of past system performance.

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### **REMARKS**

Reconsideration and allowance of this application are respectfully requested. Currently, claims 43-48 and 50-60 are pending in this application.

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached is captioned "**Version With Markings to Show Changes Made.**"

#### **Information Disclosure Statement (IDS):**

Applicant filed an Information Disclosure Statement (IDS) on July 24, 2001. Consideration and citation of each reference cited in the IDS is respectfully requested.

#### **Rejections Under 35 U.S.C. §102 and §103:**

Claims 45-49 were rejected under 35 U.S.C. §102(b) as allegedly being

anticipated by Babayev et al (U.S. '121, hereinafter "Babayev").<sup>1</sup> Applicant respectfully traverses this rejection.

For a reference to anticipate a claim, each element must be found, either expressly or under principles of inherency, in the reference. Applicant respectfully submits that Babayev fails to disclose each and every element of claims 45-49.

With respect to independent claim 45, Applicant submits that Babayev fails to disclose "identifying component processes for use in provisioning the requested service (emphasis added)." The Office Action indicates that col. 5, line 27 to col. 6, line 38 of Babayev discloses this claimed feature. Applicant respectfully disagrees. This portion of Babayev teaches the data structures used by Babayev's resource allocation program. As is known, computers are data processing machines. The data that computers process is arranged into data structures (e.g., a type of variable, and array of a given size containing certain types of variables). That data is subject to processes in order to produce output data. The definitions of the various data structures (i.e., data types) disclosed in col. 5, line 27 to col. 6, line 38 therefore does not disclose the identification of component processes as required by claim 45. Since Babayev fails to disclose "component processes", Babayev further fails to disclose "establishing conditions applicable to provision of those component processes (emphasis added)," as required by claim 45.

With respect to claims 46-49 which were also rejected under 35 U.S.C. §102(b) over Babayev, Applicant notes that each of these claims requires

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<sup>1</sup> Babayev was patented on March 25, 1997, less than one year prior to the international filing date of international application no. PCT/GB97/00395 filed February 12, 1997. Since the subject application is a national phase filing of PCT/GB97/00395, Applicant submits that the Examiner's indication that Babayev qualifies as prior art under 35 U.S.C. §102(b) is believed to be erroneous.

“component processes.” Applicant therefore submits that these claims are not anticipated by Babayev for at least the same reasoning discussed above with respect to claim 45.

With respect to independent claim 46, Applicant submits that Babayev fails to disclose “identifying component processes” as noted above and “wherein one or more of said established conditions has an associated expiry time of the one or more conditions itself for storage in the data store.” Applicant has clarified this claim to ensure that what is being referred to is the expiry of the condition itself and not some time limit referred to within the condition. Col. 2, lines 48-56, specifically identified in the Office Action, states “Thus, in this preferred embodiment, it is an aspect of the present invention to provide for the efficient allocation of resources wherein the resources are service provider time such that each customer service request generating a service time interval, the actual scheduling of a service provider may be performed at a later date than when the initial customer service request is received within, however, the constraints of the previously specified service time interval.” While Babayev therefore refers to scheduling at a certain date, this date is certainly not the associated expiry time of the condition itself.

With respect to claim 47, Applicant submits that Babayev fails to disclose “identifying component processes” and “wherein one or more of said established conditions has an associated expiry time of the one or more conditions itself” as discussed above with respect to claims 45 and 46. Applicant further submits that Babayev fails to disclose the claimed feature “an expired or unidentified condition is detected in the data store, which condition is applicable to a component process

for the provision of a requested service, and a substitute condition is established in response to said detection (emphasis added).” Col. 7, lines 15-22, specifically identified in the Office Action, merely discusses a constraint applied to an optimization process used in Babayev. There is no suggestion that the constraint changes and thus no teaching whatsoever of a substitute condition. The passage at col. 7, lines 37 to 54 of Babayev discusses the objective function being maximized in the optimization process. The objective function is not a constraint, and hence, even if the Office Action’s alleged correspondence between a “constraint” of Babayev and the “condition” of the claims were established (Applicant submits that it has not), the rejection over Babayev would fail. While a condition can be met-or not met, this is not true of the objective function taught by Babayev.

Claim 48 has been amended to clarify the limitation recited therein. Claim 48 depends from independent claim 45. In the discussion regarding claim 45, the Office Action associated the claimed “service request” with a request for a service call from a customer representative of a utility or telecommunications company. Here, the Office Action appears to suggest that the solving of the optimization problem is the requested service. Accordingly, it does not appear that the interpretation of the claimed terms in dependent claim 48 is consistent with the interpretation of the same terms in base claim 45.

Accordingly, Applicant respectfully submits that still pending claims 46-48 are not anticipated by Babayev and respectfully requests that the rejection of these claims under 35 U.S.C. §102(b) be withdrawn.

Claims 50, 51, 53 and 57-60 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Wrabetz et al (U.S. '791, hereinafter "Wrabetz"). Applicant respectfully traverses this rejection.

Before discussing each of the above rejected claims in detail, Applicant first notes that there is a fundamental difference between the distributed computer system disclosed in Wrabetz and that required by claims 50, 51, 53 and 57-60. In the Wrabetz system, "agent" programs are occasionally executed at each of the computers which might be used to perform a task in order to report on the availability of resources from that computer. A centralized "Resource Information Database" collates all such messages from agents and hence keeps track of what computing resources are available at a given time. When a user program running on one of the computers in the network requires some processing to be performed, a query is sent to the resource information database which returns a list of devices which could perform that processing. The user program receives that list and then sends a request to a computer on that list. All computers on that list are able to perform the necessary processing. The user program then sends a request for the processing to one of the computers on that list. The processing is then completed and the results are returned to the user program. The computer asked to perform the processing will always perform that processing. That is, that computer has no autonomy and is therefore not able to negotiate as to how or whether it performs the process.

With respect to independent claim 50, Applicant submits that Wrabetz fails to disclose "means to update said data about said system on the basis of the past performance of the system." The Office Action alleges that col. 27, lines 39-42 of

Wrabetz discloses this claimed feature. Applicant respectfully disagrees. This portion of Wrabetz merely describes the function `update_nw_res_instance` which updates the resource information base responsive to the receipt of a message from the computer executing an agent program. This function has nothing to do with past performance. If the process is already in the past, it will no longer require system resources and will not be reported by a computer operating the control of the agent program.

Applicant further submits that Wrabetz fails to disclose “programmed computer means for negotiating with another entity”. The Office Action indicates that col. 7, lines 55-58 and col. 10, lines 49-53 disclose this feature. Applicant respectfully disagrees. Indeed, col. 7, lines 55-56 shows that the opposite is true. This portion of Wrabetz indicates that it is clear that the remote service is performed unconditionally on receipt of a request. There is no mechanism for the computer selected to perform the process to suggest that the process be executed in some other way than requested. Col. 10, lines 49-53 merely indicate that the local area network described in Wrabetz might be connected to other computers. Accordingly, Applicant submits that Wrabetz fails to disclose a programmed computer for negotiating with another entity. Similar comments apply to independent claims 51, 53, 58 and 59 and their respective dependents.

With respect to independent claim 51, Applicant submits that Wrabetz fails to disclose “wherein said plural systems are connected by a communications network and at least one of the systems is arranged to provide more than one instance of a service, or a negotiation for a service to one or more requesting services concurrently (emphasis added).” Moreover, Applicant submits that

Wrabetz fails to disclose "processing means to process the service request and provide a response thereto and adapted to decide, based at least in part on data held in an up-datable data store, whether to provide a service, to propose conditions under which the system is willing to provide a service or to decline to provide a service." As required by claim 51, each of the plural systems forming the distributed computing environment includes this feature. The resource management component, however, only runs on one of the computers attached to the network. Hence, the above feature is not present in a plurality of systems as required by claim 51.

Moreover, the Office Action's association of the word "organization" with an operating system program is not sensible. An operating system program is a sequence of instructions, and is not, in any sense an organization.

With respect to independent claim 53, Applicant respectfully submits that Wrabetz fails to disclose "negotiation means for use in establishing conditions applicable to provision of those component processes." Col. 20, lines 53-56 and col. 16, lines 26-29 of Wrabetz merely describes a condition that might be imposed in a resource query sent to the resource management component. Those conditions are not applicable to any component processes since no component processes have been identified. Neither is there any "negotiation means" in Wrabetz. The condition specified in the resource query must be met and hence there is absolutely no negotiation whatsoever. If a computer (17a-17c) is unable to meet the condition, that computer will not be included in the list of resources available to perform the task returned to the user program in response to the resource query.

Wrabetz discloses two interactions between a user program and a remote computer which take place before that remote computer provides a service to that user program. The first interaction involves the sending of a resource query to the resource management component and the returning of a resource list in response. The second interaction involves the sending of a service request to a remote computer and the provision of the requested service by that remote computer.

The Office Action apparently indicates that the claimed "service request" corresponds with the request for processing by a remote computer of Wrabetz, but then goes on to suggest that col. 7, lines 55 to 63 and col. 14, lines 49-54 disclose "service request processing means for identifying component processes for use in provisioning the requested service." There is no disclosure or even suggestion that the computer receiving the request for processing to be performed identifies component processes. As explicitly stated by Wrabetz, that computer simply performs the process (see col. 7, lines 55-63). Col. 14, lines 49-54 simply sets out the format of a request made to the resource management component and doesn't identify component processes for use in provisioning the requested service.

The Office Action goes on to suggest that the claimed feature "an output for providing a response to the service request, said response comprising an indication of the availability of the requested service," is disclosed by col. 7, lines 55-63, col. 8, lines 1-7 and col. 16, lines 58-60. The first two portions of this cited description relate to the "service request" seen in Wrabetz and the second portion to the "resource query". It is thus unknown upon which the Office Action intends to rely. If the first, then no indication of availability is returned. The process is either performed or failed. If the second, then the Office Action's argument is



inconsistent with the argument relative to the other parts of the claim. This also applies to the suggestion in the Office Action that the last portion of the claim corresponds to the handling of the resource query in Wrabetz. It does not. The performance of the task is in response to the service request (see col. 7, lines 55-63) after sending a condition in the resource query (col. 14, lines 49-54). In Wrabetz, the condition in the resource query determines whether the service request is sent rather than whether a response to the service request is provided. In contrast, in the present invention, conditions determine whether there is a response to the service request. /

Claims 57 and 58 are not anticipated by Wrabetz by virtue of their respective dependencies on claim 53. Claim 58 further requires "processing means is adapted to process a service request accessing the stored set of conditions in the data store, processing the request using said store set and producing said response." As discussed above with respect to claim 53, Wrabetz fails to access the stored set of conditions in response to receiving a service request. That is done before the service request is sent and hence simply can not be done in response to it.

With respect to independent claim 59, Wrabetz discloses a process that is performed unconditionally on receipt of a service request. Accordingly, Wrabetz fails to use a programmed computer to negotiate with another entity as discussed above. Furthermore, Applicant respectfully submits that Wrabetz fails to update data on the basis of past system performance as discussed above with respect to claim 50. Similar comments apply to independent claim 60.

Accordingly, Applicant respectfully submits that claims 50, 51, 53 and 57-60 are not anticipated by Wrabetz and respectfully requests that the rejection of these claims under 35 U.S.C. §102(b) be withdrawn.

Claims 44, 52 and 54-56 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Wrabetz and further in view of Babayev.

Claim 52 depends from claim 51, claims 54-56 depend at least indirectly from claim 53 and claim 44 depends from claim 60. Accordingly, Applicant submits that Wrabetz and Babayev (even if combined as proposed in the Office Action) fails to teach or suggest each and every claimed element of the invention required by the respective base claims for at least the reasons noted above.

Moreover, claims 44 and 52 require “wherein the virtual organization exists for a predetermined period.” The Office Action apparently suggests that col. 16, lines 1-2 of Babayev which states “A method for scheduling customer service requests for a predetermined time period, comprising the steps of:” discloses this feature. Applicant respectfully disagrees. While this portion of Babayev contains the words “a predetermined time period”, it is clear that this is the time period for which a service call by a representative of a utility or telecommunication company is scheduled. That time period has nothing whatsoever to do with the time period for which the program proposed by Babayev is executed.

With respect to claim 54, the Office Action again tries to equate the features of the service call suggested by running Babayev’s program with the processes performed in Wrabetz’s computer system. This would not make sense to anyone, let alone one of ordinary skill in the art. If Babayev were to be

combined with Wrabetz, the result would be that different components of Babayev's program would be run on different computers. There will be no effect on the times at which the representatives of the utility or telecommunication company were told to make service calls to customers.

Accordingly, Applicant respectfully submits that claim 44, 52 and 54-56 are not obvious over Babayev and Wrabetz and respectfully requests that the rejection of these claims under 35 U.S.C. §103 be withdrawn.

**Conclusion:**

Applicant believes that this entire application is in condition for allowance and respectfully requests a notice to this effect. If the Examiner has any questions or believes that an interview would further prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

46. (Amended) A service provision method for use in distributed processing environments, said method comprising:

- receiving a service request;
- identifying component processes for use in provisioning the requested service;
- establishing conditions applicable to provision of those component processes;
- accessing an up-datable data store for storing said conditions when established; and
- providing a response to the service request, said response comprising an indication of availability of the requested service;

wherein a service request is processed by accessing one or more of the previously established conditions in the data store, processing the request using the one or more established conditions, and producing said response, and

wherein one or more of said established conditions has an associated expiry time of the one or more conditions itself for storage in the data store.

47. (Amended) A service provision method for use in distributed processing environments, said method comprising:

- receiving a service request;
- identifying component processes for use in provisioning the requested service;

establishing conditions applicable to provision of those component processes;

accessing an up-datable data store for storing said conditions when established; and

providing a response to the service request, said response comprising an indication of availability of the requested service;

wherein a service request is processed by accessing one or more of the previously established conditions in the data store, processing the request using the one or more established conditions, and producing said response,

wherein one or more of said established conditions has an associated expiry time of the one or more conditions itself for storage in the data store;

wherein:

an expired or undefined condition is detected in the data store,

which condition is applicable to a component process for the provision of a requested service, and

a substitute condition is established in response to said detection.

48. (Amended) A method as in claim 45 which further comprises initiating one or more of said component processes [in provision of a] identified for use in the requested service.

51. (Amended) A distributed computing environment comprising plural systems, each system being for use in providing services in a distributed processing environment, and each said system comprising:

an input connected to a distributed processing environment for receiving a service request from an entity;

a response output connected to said distributed processing environment for providing a response to the entity;

processing means to process the service request and provide a response thereto and adapted to decide, based at least in part on data held in an up-datable data store, whether to provide a service, to propose conditions under which the system is willing to provide a service or to decline to provide a service;

means to access the data store for storing parameter(s) indicative of the available capacity of the system to provide the service; and

wherein said plural systems are connected by a communications network and at least one of said systems is arranged to provide more than one instance of a service, or of a negotiation for a service, to one or more requesting systems concurrently; and

wherein each of said systems is associated with a plurality of organizations, each of said systems having a processing means and means to access stored parameters in the up-datable data store in respect of each of its associated plurality of organizations so as to provide a virtual organization.

*Amended*

54. ~~(New)~~ A service provision system as in claim 53 wherein one or more of said established conditions has an associated expiry time of the one or more conditions itself for storage in the data store.

59. (Amended) A service provisioning method, said method comprising:

using a programmed computer to [negotiating] negotiate with another entity, in response to a request from said other entity, to provide a service, accessing one or more resources available for use by the system to provide a service,

said negotiating including use of a data store containing data relating to a measure of the current capacity to provide a service, and being arranged to negotiate based at least in part on said data to provide a service in response to a request; and

updating said data on the basis of past system performance.